



SuperfundToday

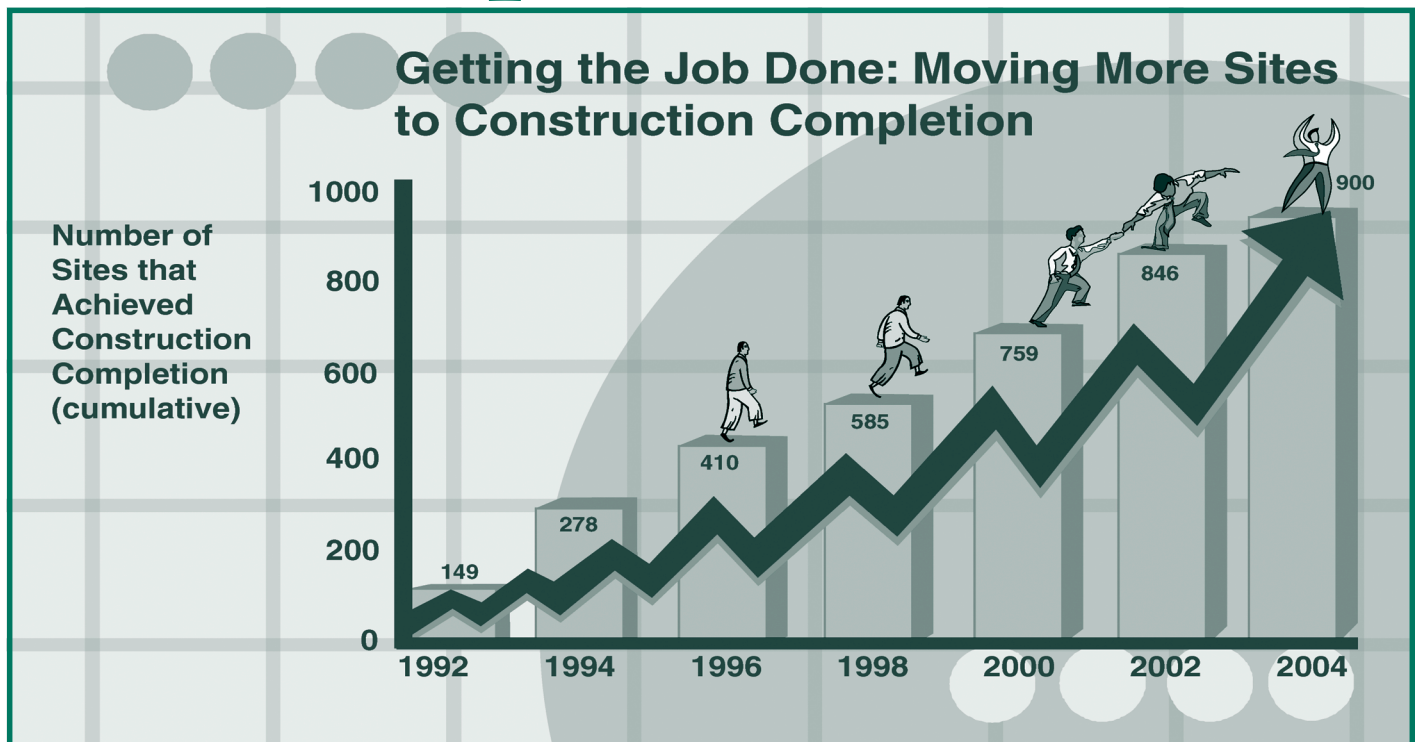
FOCUS ON CONSTRUCTION COMPLETION

EPA Celebrates 900th Superfund Site Construction Completion

The Superfund program has come a long way since the first construction completion in 1983. In August 2004, the United States Environmental Protection Agency (EPA) finished cleanup construction work at its 900th site, Solitron Microwave, in Port Salerno, Florida. This means that at 59% of the 1,527 Final or Deleted National Priorities List (NPL) sites, all immediate threats are eliminated and all long-term threats are under control.

EPA is dedicated to the protection of human health and the environment. By collaborating with states, local governments, and communities, the EPA is transforming hazardous waste sites into resources communities can use for business, homes and recreation.

Construction Completion 900 Sites



CELEBRATING 900 CONSTRUCTION COMPLETIONS

What Is Construction Completion?

At sites where construction is completed, there is no longer a threat to the health and well-being of the surrounding community. EPA has designed and built a remedy which prevents contaminants from spreading through the soil, surface water, or ground water. The site may very well be ready for some new beneficial use.

A construction completion occurs when three conditions have been met:

1. No further on-site construction is necessary.
2. All immediate threats have been eliminated.
3. All long-term threats are under control.

There are several ways a site may reach construction completion. The three most common approaches are:

Containment. EPA covers the site or somehow confines the hazardous material. Drains and gas collection systems may be installed to capture anything that leaks from the site.

Removal. EPA digs up and removes all toxic materials and soils and disposes of them at a licensed hazardous waste landfill.

Treatment. EPA uses an on-site technology, such as soil washing, air stripping or incineration, to destroy any hazardous materials or render them harmless.

A site may reach construction completion without all cleanup work being finished. There still may be some ongoing operation, such as pumping and treating ground water.

Construction Completion Information

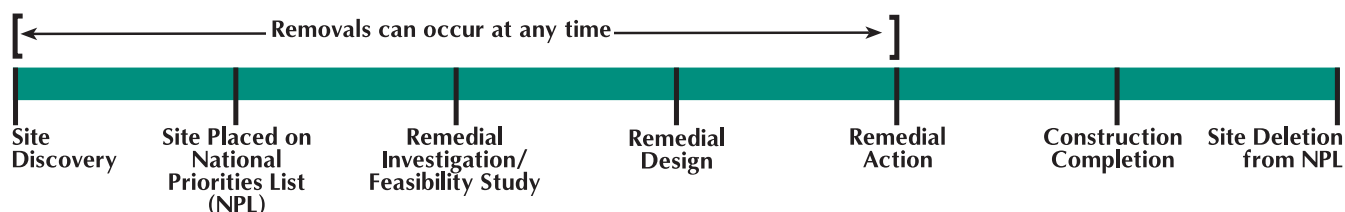
Contact the Superfund Docket to obtain these publications:

- *Common Cleanup Methods at Superfund Sites.* 1994. U.S. EPA, Office of Solid Waste and Emergency Response. EPA-540-R-94-043.
- *Superfund Post Remediation Accomplishments: Uses of the Land and Environmental Achievements, Volume 1.* 1996. U.S. EPA, Office of Solid Waste and Emergency Response. EPA-540-R-94-007.
- *Close Out Procedures for NPL Sites.* 2000. U.S. EPA, Office of Solid Waste and Emergency Response. EPA 540-R-98-016.

Superfund Docket: (703) 603-9232 or superfund.docket@epa.gov

However, EPA will not count a site as a construction completion if there is still a potential risk posed to public health or the environment. Once a site has reached construction completion, it may be ready for some recreational, economic or environmental use. Turn to Page 7 to learn more about how a former Superfund site may become a business area, a park, or some other community asset.

Where does Construction Completion Fit in the Superfund Pipeline?



The Solitron Microwave Site: *From Ground Water Contamination to Economic Revitalization*

Solitron Microwave in Port Salerno, Florida is the 900th Superfund site to reach the construction completion milestone.



The Threat. Solitron Microwave is a 20-acre site that was used for plating and manufacturing processes from 1963 to 1987. From 1991 to August 1998, the Martin County Health Department discovered twelve private wells with contaminant levels higher than drinking water standards. EPA sampling in 1998 confirmed that the ground water remained contaminated, and the EPA added the Solitron site to the National Priorities List (NPL).

The Remediation. Through a cooperative agreement with the Florida Department of Environmental Protection (FDEP) and EPA, Martin County received funding to extend water lines to homes using private wells impacted by site contamination. To date, Martin County has extended water lines to approximately 150 homes located north of the site giving them the opportunity to connect to public water. Under an agreement with the EPA, the Army Corp of Engineers excavated contaminated soil near the rear of the Solitron building. As part of its redevelopment plan, the developer demolished the Solitron building, which had been an eyesore to the Port Salerno community for many years. Additional contaminated soil which had been underneath the building, was then excavated. In 2002, the EPA determined that natural processes were eliminating ground water contamination in areas it had previously planned on cleaning using an in-situ chemical oxidation process. As a result, the EPA will continue to sample ground water to ensure natural processes reduce contaminants below cleanup standards.

The Accomplishment. Port Salerno will gain a 20-acre industrial park, which will provide 150,000 square feet of warehouse and light industrial space. The Port Salerno Industrial Park will serve as a showcase for builders such as plumbing contractors, electricians, and marble wholesalers. The community will now have a clean and safe location to help revitalize the local economy.

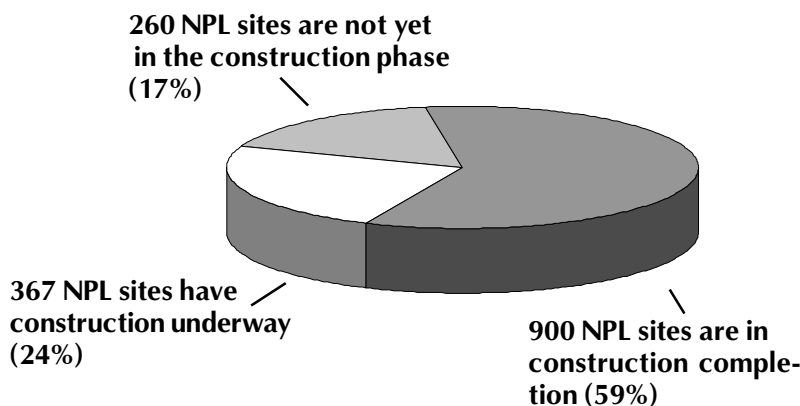


Construction Completion Statistics

Number and Types of NPL Sites

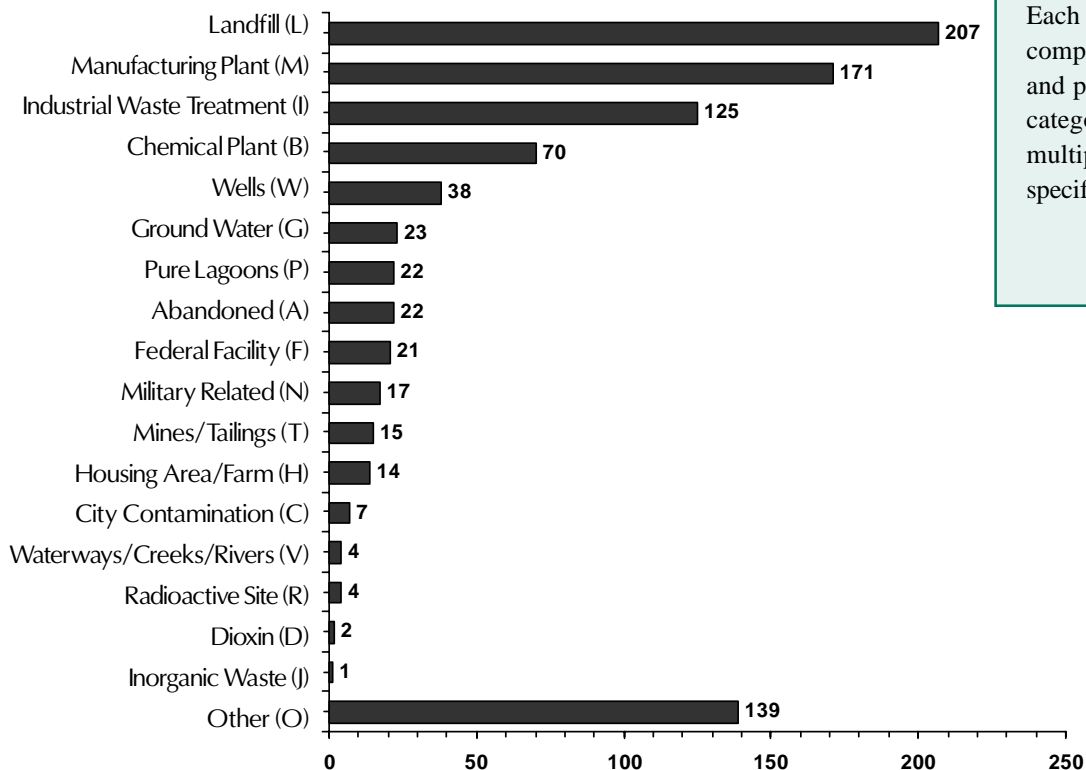
Construction Completion Progress

As of the end of FY2003, 58% of the 1,527 Final or Deleted National Priorities List (NPL) sites were in construction completion



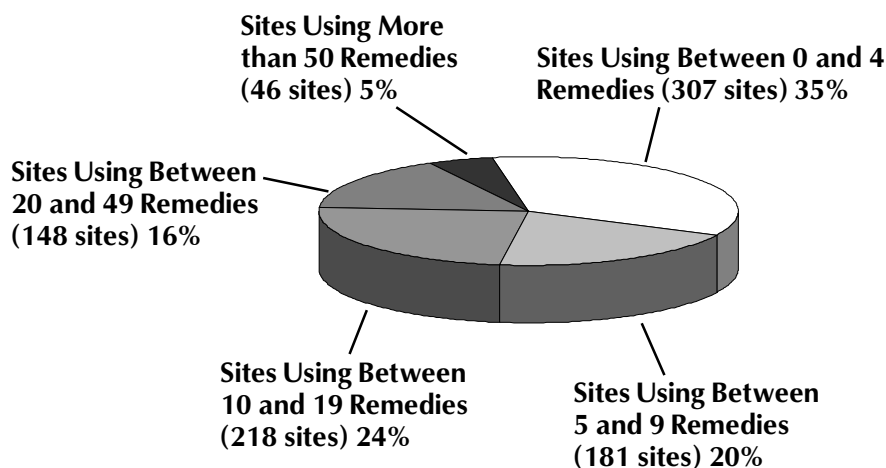
Types of Construction Completion Sites

Each of the 900 construction completion sites is characterized and placed into site-type categories. Some sites fall into multiple categories due to site-specific complexities.



Construction Completion Statistics

Multiple Remedies Used



What Does it Take to Move a Site to Construction Completion?

This pie chart shows that most sites require the use of more than one remedy to reach construction completion.

Cleanup Remedies Used at Superfund's Construction Completion Sites

This table lists remedies that have been used at 5 or more of the 900 construction completion sites (there are other remedies that have been used at fewer sites.)

For more information about these remedies go to:

www.cluin.org/techfocus/

REMEDY TYPE # OF SITES

Air Sparging-----	23
Bioremediation -----	50
Bottom liner-----	7
Capping and Cover -----	238
Chemical Treatment -----	14
Containment -----	460
Drainage and Erosion Control ---	168
Dual-Phase Extraction -----	7
Engineering Control -----	80
Flushing -----	10
Ground Water Monitoring -----	414
Incineration (off-site) -----	60
Incineration (on-site) -----	22
Institutional Control -----	404
Mechanical Soil Aeration -----	5
Neutralization-----	5
Off-site landfilling -----	16
Permeable Reactive Barrier -----	8

REMEDY TYPE # OF SITES

Phytoremediation -----	5
Population Relocation -----	5
Pump and Treat -----	431
Soil Vapor Extraction -----	93
Solidification/Stabilization -----	94
Source Monitoring -----	178
Thermal Desorption -----	30
Vertical Engineered Barrier -----	28
Water Supply Remedies -----	64

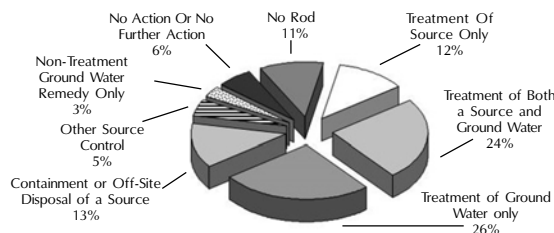
Technology Advances in Cleanup

The maturity of the Superfund program is reflected in the suite of technologies now being used to remediate sites on the NPL. Many of these technologies were not available in the early 1980s. Remedies at Superfund sites vary depending on the severity of the contamination, the nature of the contaminant, and the risk presented to human health and the environment. Treatment of contaminated media is the most aggressive remedial option, and is part of the remedy at 62% of NPL sites through 2002. Thirteen percent of the sites use containment and/or off-site disposal as the most aggressive source control remedy, while six percent of the sites were found to require no further action. At 11% of sites, no remedy decision has been made. (The balance of sites receive a variety of protective measures such as alternative drinking water supplies, well-drilling prohibitions, or monitored natural attenuation.)

Since Superfund's inception many technological advances have been made in treatment technologies permitting EPA and regulated parties to tackle problems that previously would have been prohibitively costly or technically infeasible. Many of these advances have come by means of "in situ" treatment technologies, those in which the contaminated medium is treated in place, without the need for excavating soils or pumping of ground water. By 2002, EPA applied in situ technologies at 43% of all source control treatment projects. The remediation of contaminated ground water is also experiencing advances, offering project managers more options in dealing with complex problems. For example, permeable reactive barriers (PRBs) use a subsurface reactive media placed in the path of a contaminated ground water plume. Contaminants in the plume are treated as they pass through the PRB. At some sites, this technology is more cost effective than traditional ground water pump and treat systems.

Types of Cleanup at NPL Sites (FY 1982–2002)

Total Number of Sites = 1,499



Spotlight on Technology

■ The most common Treatment Technologies

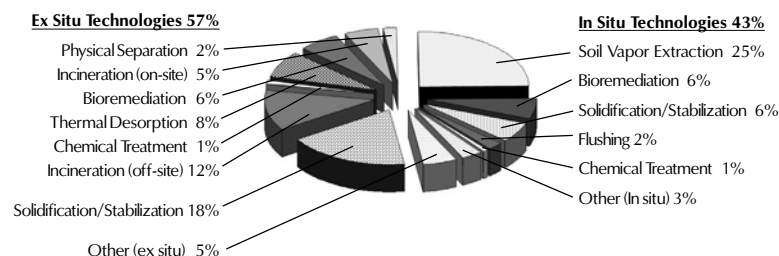
- Pump and Treat
- Soil Vapor Extraction
- Solidification/Stabilization
- Incineration

■ The Rising Stars of Innovative Technology

- Bioremediation
- Thermal Desorption
- Phytoremediation
- Chemical Treatment

See Treatment Technology for Site Cleanup; Annual Status Report (11th Edition) EPA-542-R-03-009.

Source Control Treatment Projects (FY 1982 - 2002)



Superfund has also embraced recent field-based measurement and monitoring technology advances. These technologies reduce the time needed to determine the nature and extent of contamination, track progress of an active remedy, and offer reliable cost-effective options for monitoring longer term remedies such as pump and treat systems.

For more information on innovative technologies for the remediation or characterization of hazardous waste visit the Technology Innovations Office Website at www.epa.gov/tio.

Ready for *Productive Reuse*

Contrary to the image of Superfund sites as toxic and barren eyesores, sites may be used for office parks, recreation, industrial centers, shopping malls, residences and wetlands after construction completion. Sites that were once abandoned or underused have now become valuable community resources.

Locations that once pulled the local economy down are now generating new tax revenue and serving as catalysts for broader revitalization. There have already been more than 300 reuse success stories at Superfund sites all over the country.

Reuse can create many benefits for communities, including new jobs, higher property values, recreational opportunities and environmental amenities. Planning for productive reuse must be a partnership effort. The best outcome is achieved by the active involvement of representatives from all parts of the community (homeowners, local officials, businesses, civic groups, grassroots organizations, educators, etc). Community representatives should be engaged early in the site planning process to think creatively about reuse opportunities and to help make the decisions about what will be done.



FOR MORE INFORMATION ABOUT CONSTRUCTION COMPLETION . . .

Superfund Home Page: www.epa.gov/superfund

EPA Home Page: www.epa.gov

EPA Superfund Hotline: (800) 424-9346 or TDD: (800) 553-7672 • www.epa.gov/epaoswer/hotline

Superfund Docket: (202) 566-0270 • superfund.docket@epa.gov

EPA Technology Innovation Office CLU-IN Database (Cleanup Information): www.clu-in.com

EPA Headquarters Library: 1200 Pennsylvania Ave, NW, (3404T) Washington, D.C. 20460 • (202) 566-0556

Ohio River Park *Pennsylvania*

The Ohio River Park Superfund site, formerly known to residents as "poison park," served as a landfill for domestic and industrial waste from the 1930's until the mid 1960's. Cooperation between EPA, the Neville Land Co., the Pennsylvania Department of Environmental Protection, Allegheny County, and the local community has created an aesthetically pleasing recreation area, which includes two ice arenas, a fitness center, and facilities for basketball and other sports. The center employs about seventy people and hosts thousands of visitors daily, generating personal income and public revenues. Cleanup and redevelopment of the site is protecting the people, environment, and water supply of the city of Neville Island.

Miami Drum Service *Florida*

While constructing a rail maintenance facility and repair yard, Dade County discovered hazardous waste on property formerly owned by Miami Drum Services, a company that purchased, cleaned, and resold more than 5,000 drums that once contained chemical and hazardous wastes. The company dumped, into low-lying areas on the property, corrosives, solvents and toxic metals from the cleaning process, which seeped into Biscayne Aquifer, a key source of drinking water for area residents. Through collaboration with the Dade County Department of Environmental Quality and EPA, the site was cleaned and Dade County was able to resume construction of the rail maintenance and repair facility. Now in operation, the 82-acre William Lehman Operations and Maintenance Center serves as a major train repair facility for Dade County's aboveground electric rail system and provides 400 permanent jobs for local residents.

Coalinga Asbestos Mine *California*

EPA discovered that the City of Coalinga was contaminated with asbestos after serving as an asbestos storage center for many years. As part of the City-wide effort, EPA demolished the storage buildings and excavated asbestos-contaminated soil. Faced with the prospect of economic decline, the city seized the opportunity to work with EPA to redevelop contaminated properties following their cleanup. Coalinga became home to a K-Mart and two major housing developments, easing Coalinga's growing need for housing and providing a new source of jobs and revenue.

NUMBER OF Construction Completion Sites By State

FOCUS ON CONSTRUCTION COMPLETION

<i>Alabama</i> 5 SITES	<i>Idaho</i> 6 SITES	<i>Nebraska</i> 3 SITES	<i>South Carolina</i> 21 SITES
<i>Alaska</i> 4 SITES	<i>Illinois</i> 22 SITES	<i>Nevada</i> 0 SITES	<i>South Dakota</i> 3 SITES
<i>American Samoa</i> 1 SITE	<i>Indiana</i> 26 SITES	<i>New Hampshire</i> 11 SITES	<i>Tennessee</i> 12 SITES
<i>Arizona</i> 5 SITES	<i>Iowa</i> 18 SITES	<i>New Jersey</i> 54 SITES	<i>Texas</i> 25 SITES
<i>Arkansas</i> 12 SITES	<i>Kansas</i> 8 SITES	<i>New Mexico</i> 9 SITES	<i>Utah</i> 8 SITES
<i>California</i> 46 SITES	<i>Kentucky</i> 17 SITES	<i>New York</i> 60 SITES	<i>Vermont</i> 6 SITES
<i>Colorado</i> 7 SITES	<i>Louisiana</i> 14 SITES	<i>North Carolina</i> 19 SITES	<i>Virgin Islands of the U.S.</i> 2 SITES
<i>Connecticut</i> 8 SITES	<i>Maine</i> 10 SITES	<i>North Dakota</i> 2 SITES	<i>Virginia</i> 13 SITES
<i>Delaware</i> 16 SITES	<i>Maryland</i> 8 SITES	<i>Northern Mariana Islands</i> 1 SITE	<i>Washington</i> 44 SITES
<i>District of Columbia</i> 0 SITES	<i>Massachusetts</i> 13 SITES	<i>Ohio</i> 28 SITES	<i>West Virginia</i> 3 SITE
<i>Federate States of Micronesia</i> 1 SITES	<i>Michigan</i> 68 SITES	<i>Oklahoma</i> 6 SITES	<i>Wisconsin</i> 39 SITES
<i>Florida</i> 43 SITES	<i>Minnesota</i> 38 SITES	<i>Oregon</i> 7 SITES	<i>Wyoming</i> 2 SITE
<i>Georgia</i> 9 SITES	<i>Mississippi</i> 3 SITES	<i>Pennsylvania</i> 80 SITES	
<i>Guam</i> 1 SITES	<i>Missouri</i> 14 SITES	<i>Puerto Rico</i> 9 SITES	
<i>Hawaii</i> 1 SITE	<i>Montana</i> 4 SITES	<i>Rhode Island</i> 5 SITES	